

**REMARKS**

Claims 1-32 remain in this application. Claims 1 and 23 were amended in this response. No new matter has been introduced as a result of the amendments. Support for these amendments may be found, for example, in paragraphs [177-190]. Favorable reconsideration is respectfully requested.

Claims 12, 13, 15-22 and 34-41 are allowed. Claims 6, 7, 29 and 30 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Claims 1-5, 8, 10, 23-28, 31 and 32 were rejected under 35 U.S.C. §102(e) as being anticipated by *Reichman et al.* (US Patent 6,240,073). Claims 11 and 33 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Reichman et al.* (US Patent 6,240,073) in view of *Heath et al.* (US Patent 6,564,274). Applicant traverses these rejections.

Specifically, *Reichman* does not teach or suggest the feature of a network control cluster configured to dynamically manage available bandwidth associated with the plurality of return channels during transmission as recited in independent claim 1, and similarly recited in independent claim 23.

*Reichman* discloses a multiple access configuration for the reverse link of a two way satellite communication system, where the reverse link accommodates various data rates in accordance with the transmitter power and the size of the antennae in addition to the type of information to be transmitted (col. 9, lines 38-44). The reverse link is utilized to transmit three different types of communication to the hub. A first message type includes short messages that require transmission rates lower than a certain number of bytes/sec and typically requires immediate access to the channel. A second message type requires transmission rates higher than a certain number of bytes/sec and includes large files of information. A third message type include messages that are known to require a continuous type communications channel, and includes messages generated from two way bandwidth intensive applications such as video conferencing, Internet phone, etc. (col. 9, line 52 – col. 10, line 7).


The multiple access configuration of *Reichman* has two modes of operation: random access (RA) and a channel assignment (CA) mode. Communications always start in the random access mode using the random access frequency sub band in such a way that the user is able to start communications at any point in time. After communications have begun, the system decides whether to continue in random access mode such as when the user is browsing, for example, or whether to assign a channel with optimal bandwidth in accordance with the users application/message type, e.g., video conferencing or Internet phone applications (col. 10, lines 30-40). Once the system goes into CA mode, a FDMA technique is applied to allocate a single user (col. 14, lines 26-29) to a specific frequency band to administer bandwidth allocation among the various users (col. 14, lines 49-57).

Thus, *Reichman* does not manage available bandwidth, but merely allocates frequencies to users based on a detected application or message type. *Reichman* calculates a total bandwidth ( $B_T$ ), and divides it by the average data rate ( $R$ ) to determine the maximum number of users ( $N$ ) that may be assigned a specific frequency band (col. 14, lines 29-47). *Reichman* has no way of determining what available bandwidth exists during transmission – it follows that *Reichman* also cannot teach the management of available bandwidth as well.

*Heath* is silent regarding these features as well, and does not solve the deficiencies of *Reichman*, discussed above. Accordingly, Applicant respectfully submits that claims 1-32 of the present application are both novel and non-obvious over the art of record.

Accordingly, Applicant respectfully requests that the rejections under 35 U.S.C. §102 and §103 be withdrawn and a timely Notice of Allowance be issued in this case. If any fees are due in connection with this application as a whole, the Examiner is authorized to deduct such fees from deposit account no. 02-1818. If such a deduction is made, please indicate the attorney docket number (115426-533) on the account statement.

Respectfully submitted,  
HUGHES NETWORK SYSTEMS

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Dated: October 19, 2005